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(54) Multiple means for feature adjustment for a reproduction apparatus

(57) In reproduction apparatus (1) having a plurality of selectable features for carrying out a reproduction run, and an operator control panel (OCP) for providing operator interface for controlling the reproduction apparatus.

The operator control panel (OCP) includes a touch-screen user input (104) having multiple ways for selecting or adjusting a feature option.

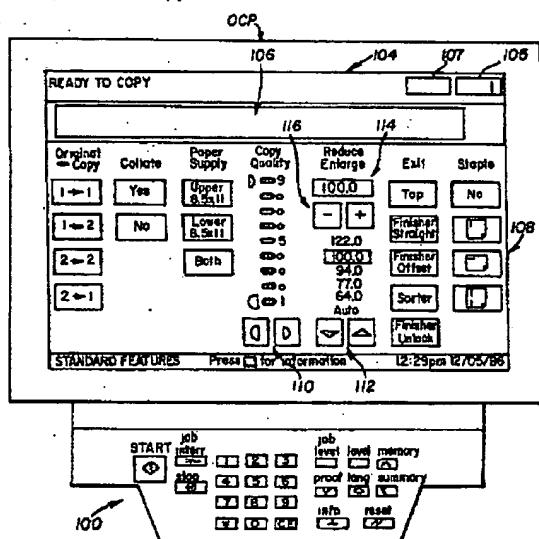


FIG. 3

Description

The present invention relates, in general, to reproduction apparatus, and relates, more specifically, to electrographic reproduction apparatus having multiple means for feature selection or adjustment.

Electrographic reproduction apparatus are provided with an operator control panel for allowing an operator to program the apparatus for a reproduction run. In its simplest form, the control panel includes several dedicated (hard) buttons and switches for selecting features for a reproduction run, as well as visual indicators for informing the operator which features were selected. The operator control panel can also have a display for displaying messages. The control panel also includes keys and buttons for altering the display to indicate selected options. (See, for example, US-A-5,113,222.) The display may also include a touchscreen overlay having "soft buttons" for providing operator input to the reproduction apparatus. (See, for example, US-A-5,045,880; US-A-5,061,958; US-A-5,105,220; US-A-5,049,931; and US-A-5,010,551.)

A problem arises when all of the selections or adjustments for a particular feature cannot be displayed as touch areas within the optimal area range. In such a case, there is not enough room on the screen to display all selections (or adjustments) as touch buttons. Yet there is a need to maintain a consistent interface with the reproduction apparatus where the user selects a feature by touching that feature's soft button. Although the latter patents disclosing a touch screen user interface include both soft button input and feature scrolling with select button input, there is no disclosure of combining the two types of user interface for alternate selection of the same feature.

According to the present invention, there is provided a solution to the problems of the prior art by providing multiple means for selecting a feature in a touch screen user input to a reproduction apparatus.

According to a feature of the present invention, there is provided in a reproduction apparatus having a plurality of selectable features for carrying out a reproduction run, an operator control panel for providing operator interface for controlling said reproduction apparatus comprising:

a display for displaying at least one selectable feature for a reproduction run with plural displayed options for said at least one selectable feature;

a touchscreen overlaying said at least one selectable feature and having operator actuatable touch areas overlaying said plural displayed options for providing operator input to said reproduction apparatus to select one of said feature options; and

a scroll touch button on said touchscreen for scrolling a visual indicator to highlight one of the feature

According to another feature of the present invention there is provided in a reproduction apparatus having a plurality of selectable features for carrying out a reproduction run, an operator control panel for providing operator interface for controlling said reproduction apparatus comprising:

a display for displaying at least two selectable features for a reproduction run with plural displayed options for each of said at least two selectable features;

10 a touchscreen overlaying at least said two selectable features and having operator actuatable touch areas overlaying said plural displayed options for each said at least two selectable features for providing operator input to said reproduction apparatus to select one or more feature options, wherein said touch areas are substantially larger for one of said selectable features than for the other of said selectable features; and

15 a scroll button on said touchscreen for scrolling an indicator to identify one of the feature options for said other of said selectable features;

20 wherein a feature option of said one selectable feature is selected only by touching said touch area associated therewith; and

25 wherein a feature option of said other selectable feature can be selected either by touching said touch area associated therewith or by actuating said scroll button to select said feature option.

Figure 1 is a front perspective view of an electrographic reproduction apparatus for incorporating the 30 present invention.

Figure 2 is a schematic diagram of the electrographic reproduction apparatus of Figure 1.

Figure 3 is a diagrammatic view of an operator control panel, including a display with a touchscreen.

35 Figures 4-7 are respective screens useful in explaining the present invention.

Because electrographic reproduction apparatus 1 are well-known, the present description will be directed, in particular, to elements forming part of or cooperating 40 more directly with the present invention. Apparatus not specifically shown or described herein are selectable from those known in the prior art. Particular reference is made to US-A-4,740,818 and US-A-5,113,222, the contents of which are incorporated herein by reference.

45 With reference now to Figure 1, there is shown an electrographic reproduction apparatus 1 having a recirculating document feeder 50 that includes a tray portion for accepting a multi-sheet document original for reproduction. The apparatus 1 includes an operator control panel (OCP) which, as will be described, includes buttons and prompting displays for facilitating a job setup, that is, the input of an instruction set to the apparatus logic and control unit (LCU) to enable it to control a series